

CHRISTIANUS HELWICH ON
DIFFICULTY OF RESPIRATION
(AUGSBURG, 1722) *

SAUL JARCHO

DURING recent investigations of our concepts of heart failure—investigations which originated ultimately at the bedside—it became necessary to study a number of clinical writings that reflect conceptions discarded, superseded, or radically modified long ago. A few of these writings have been translated and edited for publication.¹⁻⁵

To this series I have elected to add a contribution by Christianus Helwich, since it is not only the work of an eminent physician but it was quoted widely during the 18th century and it describes in relatively small compass the opinions that were then held concerning the nature, diagnosis, and treatment of hydrothorax.

Christianus Helwich (1666-1740) was councillor and personal physician to several of the dukes of Silesia and *Stadtarzt* at Breslau.⁶ He was an eminent member of the Imperial Leopoldo-Caroline Academy and the probable author of its official essay on pectoral dropsy,⁵ which appeared in 1706.

The article which is here reproduced *in toto* in English translation is titled *Observata quaedam ex anatome matronae difficiliore respiratione per totum vitae spatium laborantis* (Observations made at the autopsy of a woman who had suffered from lifelong difficulty of respiration). It was published in *Academiae Caesareae Leopoldino-Carolinae Naturae Curiosorum Ephemerides*, centuria 10, observatio 32, pp. 307-10. Augustae Vindelicorum [Augsburg], Kühtz, 1722.

* * * *

*Based on research assisted by the National Institutes of Health (HE-10948).

1. Jarcho, S.: *Morgagni, Vicarius, and the Difficulty of Clinical Diagnosis*. In Stevenson, L. G. and Multhauf, R. B., editors: *Medicine, Science, and Culture; Historical Essays in Honor of Owsei Temkin*. Baltimore, Johns Hopkins Press, 1968, pp. 87-95.

2. Büchner, A. E.: De Hydrope Pectoris Ejusque Signis. *Acta Physico-Medica Academiae Caesareae Leopoldino-Carolinae Naturae Curiosorum Exhibentia Ephemerides*, vol. 6, observatio 50, pp. 191-98. Nuremberg, Endter, 1742.

3. Jarcho, S.: An Eighteenth-Century Treatise on Dropsy of the Chest (Büchner, 1742). *Bull. N.Y. Acad. Med.* 45:799-806, 1969; errata 45:993, 1969.

4. Jarcho, S.: *Roderigo de Fonseca and His Consultation on Dropsy of the Lung*. In press.

5. Academia Leopoldina Naturae Curiosorum Vratislaviae, *Observationes Practicae de Hydrope Pectoris*, Vratislaviae, Bauchius, 1706. English translation by S. Jarcho in preparation.

6. Grätzer, J.: *Lebensbilder Hervorragender Schlesischer Aerzte*. Breslau, Schottlaender, 1889, p. 209.

During her entire lifetime a certain fat and hunchbacked woman had rather severe difficulty in breathing during bodily movement. As long as she lived she spent most of the day sitting. Toward the close of her mortal lifetime the distress in her chest was greatly increased. Moreover, having called me three days before her death, she indicated, in words frequently interrupted,⁷ that the symptoms which she now suffered seemed to her to be of a different kind from those with which she had been afflicted since early life and which were caused by bad conformation of her chest and by conspicuous obesity, the concomitant of highly luxurious food and sedentary life. She said that her present difficulty of respiration not only was greater and was accompanied by more insistent rapidity, urgency, and heaviness than that which she had suffered since infancy, but that most of all the symptoms disturbed her at the time of the first sleep, when the most urgent danger of suffocation threatened and excited her. These attacks of strangulation she so greatly dreaded that she had spent many sleepless nights. Unless she was relieved she preferred to be consumed by perpetual vigils rather than to compose herself for sleep.

I carefully considered these and all other details, and I turned to my colleagues, one of whom had taken care of the patient for many years; the other had had the responsibility for two weeks. I discreetly hinted to them that I did not doubt she had an extravasation of serum in the thoracic cavity as well as irreparable disease of the internal organs. Moreover, it was impossible to dispute the truth of the pathognomonic sign which was established by Carolus Piso in *Selected Observations on Diseases thus far Overlooked Originating from Serous Effusion*, Book 3, chapter 7⁸ and which is repeated by me in *Practical Observations on Hydrops of the Chest*,⁵ published in the name of the Academy of Sciences of Breslau. Thus far my guiding star in the recognition of pectoral dropsy had been the difficulty and frequency in breathing which afflicts the patient suddenly in the first period of sleep. And so when my patient, as she herself related, fell into that difficulty of breathing in the first hours of her sleep, I concluded that there remained no doubt of the presence of serous material in the cavity of the chest.

Never shall I forget Morstinia, a lady famous for her ancestry and

7. Presumably by dyspnea.

8. Piso, Carolus: *Selectionum Observationum et consiliorum de Praetervis hactenus morbis affectibusque praeter naturam ab aqua, seu serosa colluvie et diluvie ortis*. Pont-à-Mousson, 1617, also 1618; also Leyden, 1650, 1714, and 1733.

character, from the neighboring kingdom of Poland, who had remained for many months at Breslau and quite often was imperilled by nocturnal suffocation at about the 12th hour at night. She feared these terrible attacks more than death itself and therefore she persistently requested the opinion of many physicians concerning this very serious symptom. Often, indeed, after a consultation on the causes and treatment of her sickness, she was more uncertain than she had been before the discussion had begun, since the opinions of the practitioners differed so widely. Some thought the cause was a polypus [clot] in one or other chamber of the heart. Some thought the asthma was of hypochondriac origin. Others decided that the suffocation was hysterical. I alone, relying on the certainty of the sign which has been mentioned previously, constantly asserted that the asthma came from an extravasation of serum in the chest. Edematous swelling of the feet subsequently appeared and, to be brief, an autopsy performed in Cracow abundantly confirmed my opinion.

Let my opinion stand firmly, summarized correctly as follows: in one or other patient the danger of suffocation, attacking suddenly, breaks up the first sleep; therefore extravasated serum or lymph is present in the thoracic cavity. On the other hand I would not be responsible for the following opinion: this or that patient, at the time already mentioned, does not develop difficult respiration, therefore he does not have watery matter in his chest. In addition to the example adduced on page 4 of my observations on dropsy of the chest, previously cited, Francesco Contarini, doge of Venice, had in the cavity of his chest about five pounds of serous matter. Yet his respiration was never greatly impaired. This was told by Joannes Pr[a]evotius on pages 9 and 10 of the *Observat[ionum] Medic[inalium] Episagm[ata Centum]* of the distinguished G. H. Velschius.⁹

But after these digressions let us return to our case. My colleagues did not oppose me and readily acknowledged that the disease was quite severe and underlay a catarrhal fever from which they believed the patient to be suffering and which they had declared to others. And so it was clear to all of us that all our thoughts should be directed to evacuating, as much as possible, the fluid which had accumulated in the lungs and chest and to repairing the damage to the organs, but we could

9. Velschius, G. H.: *Observationum Medicinalium Episagmata Centum*, pp. 9-10. In Velschius, G.H.: *Sylloge Curationum*. Augustae Vindel., 1667. An English translation is in preparation.

in no way see by which defences of the art this could be attained in the presence of such debility of powers and fear of lipothymia. We chose a mixture of ammoniacal gum, hyssop, syrup of helenium, etc. We also prescribed an essence of diuretic and alexipharmacic roots with which the essence of amber was mixed. For two days the patient used these drugs to no benefit. Indeed, although she took them faithfully she grew worse and, adding convulsions to her heap of troubles, suddenly died.

After her death the cadaver was sectioned at the request of her distinguished husband. When the chest was opened a serous effusion immediately flowed out and abundantly confirmed what I had predicted concerning the presence of extravasated fluid in the thorax. Apart from this the cavity which is bounded above by the clavicles, anteriorly on either side by the ribs and sternum, and posteriorly by the bones of the back, was so narrow that we could not stop wondering how it was able to contain the heart with the pericardium, the lungs with part of the trachea, and the greater portion of the esophagus. This narrowness apparently was due mostly to disease of the vertebrae, for the dorsal vertebrae were twisted forward as if into a concave contour and presented the configuration of a single solid bone, which filled out the cavity of this hollow, so conspicuous by its protuberance and breadth. On both sides the lobes of the lungs adhered to the pleura and were even united to the mediastinum and sternum. It is most probable that this union was the reason that the thoracic space was so narrow.

More than anything else in this hurried examination of the organs, the gall bladder and uterus held our attention a little longer, for they had assumed the hardness of stone. Since this lady had had her menses regularly, even during the mortal illness, it is clearer than the noonday sun that menstrual flow frequently comes from the vaginal vessels alone.

In the left kidney there was a rather large stone.

* * * *

COMMENT ON HELWICH'S ESSAY

Like some of the more prolix 19th century novelists, Helwich combines his main narrative with a number of subplots.

His principal case is that of an obese kyphoscoliotic woman who had had lifelong external dyspnea which very recently had undergone marked exacerbation. In the latest phase the conspicuous feature was

dyspnea that attacked the patient after a few hours of sleep. On this symptom alone, and without anything resembling a physical examination, Helwich declared that the woman had hydrothorax. This reasoning was based on the work of Carolus Piso (1617).

Digressing from his kyphoscoliotic patient, whom we may label Case I, Helwich tells us of a Polish lady, one Moristinia, who also was imperiled by nocturnal suffocation. Practitioners had offered such diagnoses as polypus (i.e., coagulum) in the heart, hypochondria, and hysteria. Helwich "instantly asserted that the asthma came from an extravasation of serum in the chest." Later the feet became swollen. Still later an autopsy confirmed Helwich's diagnosis of extravasation.

At this point Helwich states his opinion almost as a Euclidean proposition: if dyspnea occurs after the first hours of sleep, hydrothorax is present. The converse is not true, i.e., if nocturnal dyspnea is absent it cannot be asserted that hydrothorax is absent; this is shown by the case of the Doge Contarini, reported by Praevotius.

After these digressions Helwich returns to Case I. He and his colleagues wished to rid the patient of her thoracic accumulation but feared to cause lipothymia (syncope). They prescribed diuretics, to no avail. A huge hydrothorax was found. The vertebral column is described. Mention is made of pleural adhesions, and a few details are given about the abdominal and pelvic viscera. *Nothing is said about the heart*, since at this time hydrothorax was not attributed to cardiac failure.

In the diagnosis of hydrothorax Helwich was using an empirical method which, so far as is known nowadays, was introduced by Piso and was applied with fair success by Fonseca, Büchner, the Breslau academicians, and European physicians generally. The method rested on ancient humoralism, virtually uninfluenced by more recent physiological and anatomical advances. Our modern concept of heart failure did not as yet exist.